



IPW

Docket No. T2315-907879US02

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Murat O. Balaban :  
Serial No.: 10/662,883 : Art Unit:  
Filed: September 16, 2003 :  
For: METHOD AND APPARATUS FOR CONTINUOUS : Examiner:  
FLOW REDUCTION OF MICROBIAL AND/OR  
ENZYMATIC ACTIVITY IN A LIQUID PRODUCT :  
USING CARBON DIOXIDE

**INFORMATION DISCLOSURE STATEMENT**

**Mail Stop DD**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with Applicants duty of disclosure, the following information is submitted for consideration by the U.S. Patent and Trademark Office in connection with the above-identified application.

Since this statement is filed prior to three (3) months of the filing date of this application, and prior to the mailing of the first office action, no fee is believed to be required.

The application relies under 35 USC §120, on the earlier filing date of prior U.S. Application Serial No. 10/136,378 filed May 2, 2002 (pending), which is a continuation of Application Serial No. 09/613,714 filed July 11, 2000 (now abandoned), which is a continuation-in-part of Application Serial No. 09/314,945 filed May 20, 1999 (now abandoned). The references identified on the attached Form PTO-1449 were submitted to and/or cited by the applicant, International Searching Authority, or the Patent Office in the prior application and, therefore copies are not required to be provided. (see 37 CFR §1.98(d)).

It is respectfully requested that the Examiner fully consider each of the documents, initial the enclosed Form PTO-1449 in the appropriate place to indicate that the document has been considered, and return a copy of the initialed form to the undersigned in accordance with MPEP Section 609.

Respectfully submitted,

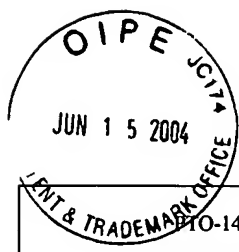
MILES & STOCKBRIDGE P.C.

A handwritten signature in black ink, appearing to read 'Dennis P. Clarke', with a stylized, cursive script.

Dennis P. Clarke  
Registration No. 22,549

Filed: 6/15/04

1751 Pinnacle Drive  
Suite 500  
McLean, Virginia 22102-3833  
Telephone: (703) 903-9000  
Facsimile: (703) 610-8686



PTO-1449 (Modified)  U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE  INFORMATION DISCLOSURE STATEMENT BY APPLICANT	ATTY. DOCKET NO. T2315-907879US02	SERIAL NUMBER 10/662,883
	APPLICANT  Murat O. Balaban	
	FILING DATE September 16, 2003	GROUP ART UNIT

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
	5,869,123	2/99	Osajima et al.			
	5,704,276	1/98	Osajimma et al.			
	5,667,835	9/97	Osajima et al.			
	5,520,943	5/96	Osajima et al.			
	5,393,547	2/95	Balaban et al.			
	5,232,726	8/93	Clark et al.			
	3,477,856	11/69	W.G. Schultz			
	2,569,217	9/51	Bagdigian			
	2,713,232	7/55	Peterson			
	2,838,403	6/58	Notter			
	2,967,777	1/61	Grindrod			
	3,442,660	5/69	Shank			
	3,597,235	8/71	Kramer			
	4,048,342	9/77	Haas et al.			
	4,049,835	9/77	Haas et al.			
	4,310,560	1/82	Doster et al.			
	4,664,922	5/87	Leon et al.			
	2,356,498	8/1944	Bargeboer			
	4,804,552	2/1989	Ahmed et al.			
	4,919,960	4/1990	Ahmed et al.			
	6,667,835	9/1997	Yutaka et al.			

EXAMINER	DATE CONSIDERED
EXAMINER: Initial citation if reference was considered. Draw line through citation if not in conformance to MPEP 609 and not considered. Include copy of this form with next communication to applicant.	

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## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	FILING DATE
	3,027,268	2/1991	Japan (Abstract)			
	2,280,240	2/2000	Canada			
	332,641	7/1930	England			
	015,184	12/1981	EPO			
	WO 89/02221	3/1989	PCT			
	812,544	12/1997	EPO			

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## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Kamihira, M. et al., "Sterilization of microorganisms with supercritical carbon dioxide", Agricultural and Biological Chemistry, Vol. 51, No. 2, pp. 407-412 (1987) (abstract)
	Arreola, A.G. et al., "Supercritical carbon dioxide effects on some quality attributes of single strength orange juice", J. of Food Science, Vol. 56, No. 4, pp. 1030-1033 (1991) (abstract)
	Ishikawa, H. et al., "Sterilization of microorganisms by the supercritical carbon dioxide micro-bubble method", Bioscience, Biotechnology and Biochemistry, Vol. 59, No. 10, pp. 1949-1950 (1995)
	Yun, H. et al., "Effect of a combined treatment of high hydrostatic pressure and carbonation on the quality characteristics of Valencia orange juice", Korean J. of Food Science and Technology, 29(5), pp. 974-981 (1997) (abstract)
	Balaban, M.O. et al., "Enzyme Inactivation by Pressurized Carbon Dioxide", Science for the Food Industry of the 21 <sup>st</sup> Century (Yalpani, M. ed., ATL Press), pp. 239-251 (1993)
	Arreola, A.G. et al., "Effect of Supercritical Carbon Dioxide on Microbial Populations in Single Strength Orange Juice", J. of Food Quality, 14, pp. 275-284 (1991)
	CA, Tan et al., Vol. 97, p. 180442e (1982)
	CA, Pichard et al., Vol. 102, p. 91875c (1985)
	CA, Crouzet et al., Vol. 105, p. 77759y (1986)
	CA, Kramer et al., Vol. 93, p. 148368s (1980)
	CA, Taniguchi et al., Vol. 105, p. 113696m (1986)
	Abstract, No. 381, "Nonthermal inactivation of pectinesterase from orange juice", 1987, Institute of Food Technologists Annual Meeting (June 16-19, 1987)
	Owusu-Yaw et al., "Low pH Inactivation of Pectinesterase in Single Strength Orange Juice", J. Food Sci., Vol. 53, pp. 504-507 (1988)
	Fife et al., "The Effect of Carbon Dioxide Upon the pH and Certain Nitrogen Fractions of the Sugar-Beet Plant", pp. 643-655 (1935)
	Van Slyke et al., "Effect of Treating Milk with Carbon Dioxide Gas Under", New York Agricultural Experiment Station, Bulletin No. 292, pp 371-384 (August 1907)
	King et al., "Preservation of raw milk by the addition of carbon dioxide", Journal of Dairy Research, 49, pp. 439-447 (1982)
	Mabbitt, "Preservation of refrigerated milk", National Institute for Research in Dairying, Shinfield, Reading, England, Kieler Milchwirtschaftliche Forschungsberichte 34(1) pp. 28-31 (1982)
	King et al., "The Use of Carbon Dioxide for the Preservation of Milk", Society for Applied Bacteriology, Series #22, pp. 35-43 (1987)
	Rowe, "Effect of carbon dioxide on growth and extracellular enzyme production by Pseudomonas fluorescens B52", International Journal of Food Microbiology, 6, pp. 51-56 (1988)
	Rowe, "Carbon dioxide to prolong the safe storage of raw milk", Milk Industry 91(7), pp. 17-19 (1989)
	Chen et al., "Effect of Dissolved Carbon Dioxide on the Growth of Psychrotrophic Organisms in Cottage Cheese", Journal of Dairy Science, 86 Annual Meeting Am. Dairy Science Ass., 74, pp. 2941-2945 (1991)
	Maniar et al., "Modified Atmosphere Packaging to Maintain Direct-Set Cottage Cheese Quality", Journal of Food Science, Vol. 59, No. 6, pp. 1305-1308 (1994)
	Hotchkiss et al., "Extending shelf-life of dairy products with dissolved carbon dioxide", European Dairy Magazine, No. 3, pp. 16, 18-19 (1996)
	Goraki, "Commitment to Cottage Cheese", Dairy Foods Ingredient Technology Lab Talk, pg 29, April (1996)

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